

SEQUOIA & KINGS CANYON NATIONAL PARKS INFORMATION FOR RESEARCHERS



INTRODUCTION

Sequoia & Kings Canyon National Parks (SEKI) have a long history of supporting scientific research that is important to park stewardship and the advancement of science. The parks would like to continue this tradition. Read below for information about the research application review process, how to submit your results, ideas for communicating your findings more broadly, and accommodations for researchers. Research and collecting permits do not allow activities for commercial gain.

RESEARCH PERMIT PROCESS

SEKI's research permit process is designed to comply with legal mandates, including the Organic Act, Wilderness Act, National Environmental Policy Act (NEPA), and National Historic Preservation Act (NHPA). The review process incorporates recommendations from *White Paper Guidelines: Scientific Activities and Research in NPS Wilderness, Version 1, January 2011* and *Landres et al. 2010. A framework to evaluate proposals for scientific activities in Wilderness, U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station*.

Please follow the steps outlined below (Fig. 1). A minimum period for review is one month for a simple application, but more complex applications may take three or more months to review.

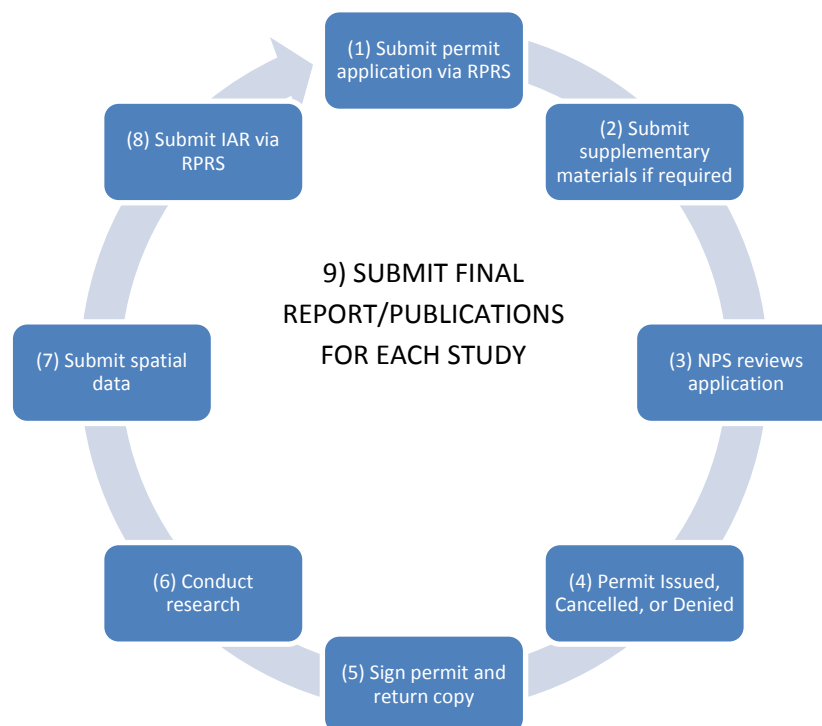


Figure 1. Steps in SEKI's research permit process

1) SUBMIT PERMIT APPLICATION ON-LINE VIA RESEARCH PERMIT & REPORTING SYSTEM (RPRS) -
<https://irma.nps.gov/rprs/>

Research and collecting permits are issued on a calendar-year basis and must be renewed annually for an ongoing study. Each permit has a permit number and a study number. A study number may apply to several permits for the same study issued over multiple years. RPRS will lead you through the steps to apply for a new or renewed permit. For new studies, in addition to filling out an application, a detailed proposed scope of work should be uploaded to RPRS.

RENEWALS: If your application is to continue an existing study that was permitted in SEKI previously, please include the study number. Renewals without significant change go through a streamlined review process. Long-term studies are fully reviewed every five years, however.

STUDENTS: If you are a student, please note the degree you are earning and the name of your advisor within the purpose of your study. Include your advisor as an additional investigator and provide their phone number and email address.

PURPOSE OF THE STUDY: Describe the research objectives, questions, and/or hypotheses to be tested. Include information so reviewers can evaluate the study's benefits to park stewardship and the advancement of science. Education benefits also will be considered. Table 1 shows metrics that reviewers use to evaluate the benefit of the proposed study.

Table 1. Benefit Metrics

Benefit	Metric	Definition of Extremely High Benefit
Stewardship	Would the results address and <i>urgent</i> stewardship issue?	Present crisis that may be at the point of irreversibility
	Would the results address an <i>important</i> stewardship issue?	Important, affecting irreversible changes to key biophysical or social aspects over a large area or long timeframe; major concern for human health/safety
	Would the results be applicable <i>immediately</i> to stewardship?	Research is specifically designed to answer a current stewardship issue
	Would the results likely be applicable to <i>future</i> stewardship issues?	Research is highly likely to be applicable in the future
	Would the results allow <i>effective action</i> on a stewardship issue?	Managers could easily and immediately take effective action with no cost to other wilderness/park values
	Would the results improve stewardship of this <i>local wilderness/park</i> ?	Results are specifically applicable to the wilderness/park in which the research is conducted
	What is the importance of contributions from this research?	This is the single most important research informing management on this important or urgent issue.
Science	How broad <i>geographically</i> will the results benefit science?	Results benefit science across the entire planet
	How far over <i>time</i> will the results benefit science?	Results provide a permanent benefit
	How many different <i>people</i> or types of people will benefit from the results?	Results benefit people nationally or globally
	How <i>important</i> is the activity to the scientific field of study?	Research is groundbreaking or precedent setting for the field and attempts to answer fundamental questions

Benefit	Metric	Definition of Extremely High Benefit
	What is the <i>breadth</i> of scientific inquiry?	Research is conducted on ecosystem or social processes and components comprehensively
Education	Do <i>students</i> benefit from the research?	Several students are directly involved with the research and/or the research is directly incorporated into educational curriculum reaching many students.
	Will park visitors or other publics benefit from the research?	Researchers will translate study methods and findings for broad audiences and effectively deliver these messages.

SUMMARY OF PROPOSED FIELD METHODS: Include information so reviewers can evaluate the scientific robustness of proposed methods and potential impacts to park resources, wilderness character, and visitor experience.

- People and duration – Group size and length of time in field? Duration of field work this year? Number of years total for the study?
- Handling or collection of specimens - What is collected or handled? Number? Locations? Frequency? Methods? Is mortality involved? Capture/release? Non-lethal collection of specimen parts? Describe potential impacts of collections on individuals, populations, ecosystem, etc. Will collection scar any resources? Will marks be noticeable to visitors? How will you minimize effects?
- Installations (i.e., anything other than camping equipment installed and left in the field without researcher attending to it) – Installations in wilderness are prohibited under the Wilderness Act and need to be found both necessary and the minimum tool in order to be approved (see MRA overview below). For all applications, describe the type of installation (if any) and the amount, footprint, visibility, and duration of installed equipment. Explain why it is necessary.
- Transportation – Mechanized and motorized transportation in wilderness is prohibited under the Wilderness Act and needs to be found both necessary and the minimum tool in order to be approved (see MRA overview below). For all applications, describe how you will access field sites other than driving on publically accessible roads. Hiking on trails? Off trail? Pack stock (how many)? Mechanical or motorized transport? How many trips?
- Sound – Will there be impacts to the natural soundscape other than typical conversational voices?
- Manipulation of environment – Do you propose physical treatment, experimental transplant, translocation or reintroduction?
- Visitor survey – Are you observing visitors? Asking them questions? Written survey? Length of survey? Where will survey occur? How often?
- Other risks –Trampling vulnerability? Threat of invasive species? Potential for unintended effects? Risks to researcher or visitor safety?
- Mitigation - What steps will you take to avoid or minimize negative impacts?

SCIENTIFIC ROBUSTNESS OF METHODS: Reviewers evaluate the scientific robustness of the methods and whether or not they are appropriate to answer the research questions and test the hypotheses. If they are not scientifically valid, then the benefits of the research are diminished. Applications with low benefits compared to impacts will be denied. Information that helps reviewers evaluate scientific robustness includes:

- Method to select study sites
- Spatial and temporal scales
- Number of samples and replication
- If you did a statistical power analysis (of other method to determine sample size)
- If you used peer-reviewed or otherwise tested methods to design the study
- Adequate quality assurance and quality control
- If your proposal has been reviewed and accepted by another review process (for example a grant program, agency or university reviewers, etc.)

2) SUBMIT SUPPLEMENTARY REVIEW MATERIALS IF REQUIRED

WILDERNESS MINIMUM REQUIREMENTS ANALYSIS (MRA) - If the research is to take place in designated or proposed wilderness, the researcher may need to submit a MRA worksheet to the science coordinator or other designated park staff. Projects that require MRA worksheets are those that propose activities either prohibited in Section 4(c) of the Wilderness Act (e.g. use of motorized equipment, motorized or mechanical transportation, installations, etc.) or that have the potential to impact wilderness character (e.g. collection of samples, use of obtrusive equipment, etc.). The MRA worksheet is designed to answer two questions: “Is the action necessary in wilderness?” and “How will the action be accomplished to minimize negative impacts?” The MRA instructions provide valuable information on how to navigate the process. Make sure to review them before completing the MRA worksheet. Step 1 of the MRA process determines if the proposed project is necessary in wilderness. You will need to outline the purpose of the study, whether or not there are options outside of wilderness, and if there is legislation, policy, or other guidance that that applies to your research. If the research is shown to be necessary in wilderness, the analysis moves onto Step 2, which uses a series of yes/no questions to determine if you need to develop “alternatives” for your research methods. If alternatives are not required, you can use the MRA short form version (which does not include Step 3). If your research is controversial or includes a 4(c) prohibited activity, you will use the regular MRA worksheet and complete Step 3 to analyze the positive and negative effects of different research method alternatives. You also will analyze the effects of taking no action in a “no action” alternative. The effects are then quantified and compared across alternatives on a scale of -3 to +3 for their effects on wilderness character. Lastly, a preferred alternative is selected by weighing the positive and negative effects of each alternative. Park staff will review your draft MRA worksheet and, if needed, offer guidance for you to improve the analysis. Go to <http://www.wilderness.net/index.cfm?fuse=toolboxes&sec=resSciAct#> for more information and <http://www.wilderness.net/index.cfm?fuse=NWPS&sec=elearning> for free training.

SOIL or SEDIMENT DISTURBANCE – If cultural resources are uncovered during field work, the researcher must stop all work in the area and contact the cultural resource program manager, who will decide how to proceed. Soil cores or augers that are 2 inches or less in diameter and proposed in reasonable numbers do not require archaeological survey prior to soil disturbance. Soil disturbance in excess of this threshold will require pre-survey by a qualified archeologist as stipulated by the National Historic Preservation Act. A limited area of the parks has already been surveyed; however, the parks are not able to provide an archeologist to survey potential research sites unless the research project can fund the

archeologist's time. Researchers will coordinate archeological survey with the parks cultural resource program manager.

SOIL OR SEDIMENT DISTURBANCE IN WETLANDS, LAKES, AND STREAMS - Notification to the State of California is required for soil or sediment disturbance in wetlands and aquatic systems as stipulated in the Clean Water Act, section 401. The parks' hydrologist can help researchers through this process. The notification is processed through the parks' compliance office.

HANDLING OR MANIPULATION OF VERTEBRATE ANIMALS – Proposals to handle or manipulate vertebrate animals must be approved by a designated Institutional Animal Care and Use Committee (IACUC). Please provide proof of approval by your university, agency, or organization's IACUC.

SAFETY PLAN – All researchers are required to prepare an adequate safety plan following best practices for the type of activities included in the permit, including travel over rough terrain, communications, and contingencies for field staff that may become injured or lost. Researchers are expected to minimize hazards to workers in the field through training, careful planning, good communications, supervision, and appropriate equipment. The science coordinator may ask the researcher for a copy of the safety plan. If the safety plan is found to be inadequate, the permit may be denied or cancelled until an adequate safety plan is developed.

SURVEYS – If federal funding or collaboration is involved in a survey of the public, then approval through the Office of Management and Budget (OMB) is required. See <http://www.nature.nps.gov/socialscience/expedited.cfm>.

3) NPS REVIEW

While SEKI supports research and monitoring activities that benefit stewardship and science, it is critical to be intellectually honest and rigorous in analyzing impacts of research activities. To conduct research in SEKI, benefits must outweigh impacts. In the case of wilderness, the MRA must support the need for the research and the identification of the minimum requirements to accomplish the research. If the permit application is for a new study or for a change to an existing study, SEKI requires a full review. First, it is reviewed by the science coordinator and/or permit assistant, who conduct an impact-benefit analysis, including input from subject matter experts. If wilderness is involved, the application (including the MRA) is reviewed by the wilderness coordinator. An application with potentially unacceptable or uncertain impacts and all those requiring a full MRA analysis will be reviewed by the National Environmental Policy Act (NEPA) compliance specialist who recommends if the application requires a further level of review. If so, additional analysis and review are carried out under the guidance of the NEPA compliance specialist. With this input, the science coordinator makes a recommendation to the Chief of Resource Management & Science. The chief is delegated to make the decision if the study is a renewal without significant change or if the study does not require a full MRA analysis. If it's a new study that requires a full MRA analysis, approval by the superintendent is required for a permit.

If application materials do not contain adequate information to conduct the impact-benefit analysis or to make a determination on the MRA, the science coordinator or other designated park staff will contact the researcher for more information. In certain cases, the parks may recommend or require changes to site locations or methods to enable the research to take place with minimum impacts or to improve the benefits. A meeting may be scheduled to discuss the application at any point in the review. If the

researcher does not respond to requests for information or changes after at least one reminder, the science coordinator may cancel the application.

A minimum period for review is one month for a relatively simple application, but more complex applications may take three or more months to review. A renewal application receives less review (unless it is a 5 year renewal). Please be upfront about any changes to a renewal application. Even review of a renewal application may take awhile due to workload. Please submit your application early.

4) PERMIT ISSUED, CANCELLED OR DENIED

The science coordinator or other designated park staff communicates the permit decision to the researcher via email. If the application is approved, a permit and supplementary materials will be attached to the email. Please read the entire permit and other information and be aware of the conditions associated with the permit. If an application is cancelled or denied, a researcher may start the process over by submitting a new (revised) application to RPRS. It is recommended that researchers discuss required changes with the science coordinator or other park staff before submitting a new application.

5) SIGN PERMIT AND RETURN COPY

Please scan the signed document and email it as a PDF attachment (highly preferred), mail, or personally deliver to the science coordinator.

6) CONDUCT RESEARCH

Doing the research is the fun part, but please make safety an important part of your study. Follow the conditions included with your permit. Some permits may require that researchers meet with the parks staff prior to conducting the research. Researchers and their field teams must have a copy of the permit on site while conducting research in the parks. A wilderness permit is required for all overnight stays in wilderness. A ranger may ask to see these permits. The science coordinator appreciates researchers who provide updates on their progress during the field season.

7) SUBMIT SPATIAL DATA

The NPS needs to know where research is conducted within parks. Adequate reporting is critical to maintain support for research and helps with the security of installed equipment and long-term study sites. Researchers must submit, to the science coordinator, spatial data for field locations before submitting a new application (even for a different study) or by March 31 of the following year, whichever is earlier. SEKI will not approve a new or renewal permit without receiving this spatial data. Even if locations and activities remain the same each year, please send an email to document it. Follow guidelines in the spatial data instructions attachment.

8) SUBMIT INVESTIGATOR ANNUAL REPORT (IAR) via RPRS

Researchers must submit their IAR before submitting a new application (even for a different study) or by March 31, whichever is earlier. The IAR is submitted directly via the RPRS website. Researchers receive an email from RPRS coordinator (currently Bill Commins) with instructions, usually in January.

9) SUBMIT FINAL REPORT/PUBLICATIONS FOR EACH STUDY

To meet our obligations to the American public, SEKI needs to track results of research conducted in the parks. Reporting your findings is a condition of an NPS research permit as well as your ethical duty as a scientist. **Final reports (manuscripts, journal articles, research briefs, etc.) now can be submitted online directly via RPRS (<https://irma.nps.gov/rprs/>), including automatic posting to the NPS Integrated Record Management Applications (IRMA) database.** You also can email your final reports to the science coordinator if you are unable to upload them to RPRS directly. In certain cases, SEKI will ask for detailed information about research results (i.e., raw or analyzed data) that pertain to an important stewardship issue. Please provide these data in a timely fashion.

COMMUNICATING YOUR PROGRESS AND RESULTS

While currently not a requirement of your research permit, SEKI asks researchers to voluntarily go beyond the reporting requirements explained above to communicate your progress or final results to broader audiences in meaningful ways. Below are several methods to do this.

- 1) Blog about your research and let us know. We can link to your blog, website, or online video via SEKI's Facebook page and employee bulletin.
- 2) Write up a short progress report and we can share it with park staff via the employee bulletin. Photos are great.
- 3) Host a field trip to your research site to demonstrate your work and its importance to the parks staff or visitors.
- 4) Write up a brief summary of your research project for a non-technical audience that addresses why you are doing/did the research, methods used, your findings, and how these results help with park stewardship and/or advancement of science. Photos and graphics are great. Please include your contact information. SEKI will be developing a template for this in the future.
- 5) Visit the parks and give a brownbag lunch seminar about your project to the parks staff.
- 6) Participate in SEKI science symposiums, which we hope to hold in the future.
- 7) If your research would be great for developing science curriculum for students, please let us know. SEKI's Education Program includes Rangers in the Classroom and hosting visiting student groups. We are looking for ways to incorporate current research into age-appropriate activities.

ACCOMMODATIONS FOR RESEARCHERS

Wolverton Service Camp (~7,000 ft elevation) is available (on a space available and seasonal basis) for camping at no cost for permitted researchers and official park volunteers. Season of operation varies with park staffing, weather, and road access. Make a reservation via the science coordinator or other park staff. The camp is equipped with picnic tables, fire rings, bear-resistant food storage lockers, porta-potties and hand-washing stations. Summer days are warm and comfortable with cool nights. Afternoon thunderstorms are common. Location is in prime black bear habitat, so encounters with bears are possible. Public showers, laundry, post office, a small store, gift shop and NPS Visitor Center are located at the nearby Lodgepole Campground. The closest metropolitan areas are Fresno (2 ½ hours), and Visalia (1 ½ hours).

Directions to Wolverton Service Camp:

From Hwy 198: Pass through entrance station; follow the Generals Highway to the Giant Forest, passing the Giant Forest Museum. When you see the General Sherman handicapped parking area, begin to look for the next road on your right, which is Wolverton Road. Turn right on Wolverton Road towards the main parking area for the General Sherman Tree. At the stop sign, instead of turning for the Sherman Tree parking area, continue straight. About ¼- ½ mile past the stop sign you will find the entrance to the campground on the left by the trash dumpster.

From Hwy 180: Once you pass through the Big Stump entrance station, follow the road until you reach the junction where 180 splits off towards Grant Grove and 198 heads towards Sequoia. Take 198/Generals Highway towards Sequoia National Park. You will pass the Wuksachi Lodge and the Lodgepole market and visitors center. After the Lodgepole Village, take the next road on your left, which will be the Wolverton Road/General Sherman Tree parking. Continue straight at the stop sign, instead of turning for the Sherman Tree parking area. About ¼- ½ mile past this stop sign you will find the entrance to the campground on the left by the trash dumpster.

Ash Mountain Dormitory has six beds available by reservation at low-cost (currently \$11.40 per night/person). The rustic dorm has a kitchen with limited supplies and a bathroom. It is located within walking distance from the Foothills Visitor Center/Ash Mountain Headquarters. Make a reservation via the science coordinator or other park staff. You will need to check in/out to sign the agreement, pick up/return keys, and pay the fee.

Sierra Nevada Research Institute (SNRI) Sequoia Field Station at Wolverton is operated by UC Merced in partnership with SEKI and the Delaware North Corporation. See <http://snri.ucmerced.edu/sequoia-field-station> for more information and to make reservations.

Researchers are allowed to occupy **administrative camp sites** (if available) if NPS has specifically requested the research (as in a cooperative agreement) or if the researchers are helping with government business and are signed up officially in the Volunteers In Parks (VIP) program. In the latter case, the parks' staff involved with the study should facilitate the researchers becoming VIPs, supervise the volunteers, ensure that they abide by applicable park protocols (including safety), and facilitate reservation of an admin campsite. Whether or not research is considered government business depends on whether or not the research falls within the scope of the parks' programs and how involved the park staff is in the project. It is not a reflection of the value of the research to the NPS.

SCIENCE COORDINATOR CONTACT INFORMATION

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Office of the science coordinator is located at the south end of the Ash Mountain Headquarters building, on the top floor in the Resource Management & Science office. The headquarters building is attached to the Foothills Visitor Center, which is on the north end.

Last updated 8/8/2014 by Koren Nydick.